**Listing of Claims**

Claim 1 (Currently amended). An optical module for a high-speed bidirectional transceiver having a first optical path and a second optical path for transmitting optical beams in mutually opposite directions comprising:

a housing;

an optical signal generating unit including a laser diode having a beam emission direction, said optical signal generating unit located in said housing and generating a first optical beam ~~having a first direction along said first optical path~~;

an optical signal receiving unit including an optical detector having a beam receiving direction, said optical signal receiving unit located in said housing and receiving a second optical beam ~~having a second direction opposite and parallel to said first direction along said second optical path~~; ~~and~~

an optical fiber connection unit attached to said housing and having an optical fiber for transmitting said first optical beam and said second optical beam;

a first collimating lens unit located on said first optical path between said optical signal generating unit and said first mirror for collimating said first optical beam;

a second collimating lens unit disposed in said optical fiber connection unit aligned to said optical fiber for collimating said second optical beam;

a first mirror for reflecting said first beam for changing direction thereof from said beam emission direction to a direction coaxial with said optical fiber; and

a second mirror for reflecting said second beam for changing direction thereof from said direction coaxial with said optical fiber to said beam receiving direction;

wherein said first optical beam is a collimated beam on a part of said first optical path from said first mirror to said optical fiber connection unit, whereas said second optical beam is a collimated beam on a part of said second optical path from said optical fiber connection unit to said second mirror.

Claims 2-7 (Canceled).

Claim 8 (Currently amended). The optical module of claim ~~7~~ 1, wherein said housing has a first recess for accommodating said laser diode and a second recess parallel to said first laser diode accommodating said ~~photodiode~~ optical detector, positions of said first recess and of said second recess being selected from a first position which is closer to said optical fiber connection unit and a second position which is further from said optical fiber connection unit.

Claim 9 (Currently amended). The optical module of claim 8, wherein said laser diode being located in said second position, and said ~~photodiode~~ optical detector being located in said first position, said first mirror is a full reflection mirror for reflecting said first optical beam emitted from said laser diode to said first full reflection mirror, while said second mirror is transparent for a beam reflected from said full reflection mirror towards said optical fiber connection unit, but fully reflective for said second optical beam emitted from said optical fiber connection unit towards said ~~photodiode~~ optical detector.

Claim 10 (Currently amended). The optical module of claim 9, wherein said first collimating ~~optical~~ lens unit is a collimating optical objective composed of at least one circular aspherical lens.

Claim 11 (Currently amended). The optical module of claim 9, wherein said first collimating ~~optical~~ lens unit is a collimating anamorphic objective composed of at least two mutually perpendicular cylindrical lenses.

Claim 12 (Currently amended). The optical module of claim 10, further provided with an optical filter ~~located between said second optical~~ and a lens unit for coupling light into ~~and~~ said ~~photodiode~~ optical detector.

Claim 13 (Currently amended). The optical module of claim 8, wherein said laser diode being located in said first position, and said ~~photodiode~~ optical detector being located in said second position, said first mirror is a full reflective mirror for reflecting said first optical beam emitted from said laser diode to said optical fiber connection unit and is fully transparent for said second optical beam emitted from said optical fiber connection unit to said optical detector ~~photodiode~~, while said second mirror is fully reflective from said second optical beam.

Claim 14 (Original). The optical module of claim 13, wherein said second mirror is selective for reflecting only said second optical beam.

Claim 15 (Currently amended). The optical module of claim 9, wherein said first collimating ~~optical~~ lens unit is a collimating optical objective composed of at one circular aspherical lens.

Claim 16 (Currently amended). The optical module of claim 9, wherein said first collimating ~~optical~~ lens unit is a collimating anamorphic objective composed of at least two mutually perpendicular cylindrical lenses.

Claim 17 (Currently amended). The optical module of claim 1, wherein said optical fiber connection unit is a pre-assembled unit comprising ~~a third~~ said second collimating lens unit, an optical fiber holding means, a spacer between said ~~third~~ second collimating lens unit and said optical fiber holding means, and an optical fiber, said spacer being sandwiched between said ~~third~~ second collimating lens unit and said fiber holding means, said fiber having a core and being in butt connection with said spacer, said ~~third~~ second collimating lens unit being collimating for said second optical beam and being focusing for said first optical beam for focusing said first optical beam onto said core.

Claim 18 (Canceled).

Claim 19 (Currently amended). The optical module of claim 8, wherein said optical fiber connection unit is a pre-assembled unit comprising ~~a third~~ said second collimating lens unit, an optical fiber holding means, a spacer between said ~~third~~ second collimating lens unit and said optical fiber holding means, and an optical fiber, said spacer being sandwiched between said ~~third~~ second collimating lens unit and said fiber holding means,

said fiber having a core and being in butt connection with said spacer, said ~~third~~ second collimating lens unit being collimating for said second optical beam and being focusing for said first optical beam for focusing said first optical beam onto said core.

Claim 20 (Currently amended). The optical module of claim 13, wherein said optical fiber connection unit is a pre-assembled unit comprising ~~a third~~ said second collimating lens unit, an optical fiber holding means, a spacer between said ~~third~~ second collimating lens unit and said optical fiber holding means, and an optical fiber, said spacer being sandwiched between said ~~third~~ second collimating lens unit and said fiber holding means, said fiber having a core and being in butt connection with said spacer, said ~~third~~ second collimating lens unit being collimating for said second optical beam and being focusing for said first optical beam for focusing said first optical beam onto said core.

Claims 21-24 (Canceled).

Claim 25 (New). An optical module for a high-speed bidirectional transceiver, comprising:

a housing having a longitudinal optical axis;

an optical signal generating unit located in a first portion of said housing, said optical signal generating unit including a laser diode and a first collimating lens unit adapted to generate a collimated outgoing beam from an emission of said laser diode;

an optical signal receiving unit including an optical detector, said optical signal receiving unit located in a second portion of said housing;

a pre-assembled optical fiber connection unit attached to said housing, said pre-assembled optical fiber connection unit having a second collimating lens unit held in optical alignment with an optical fiber to couple incoming and outgoing light between said optical fiber and said optical module, said second collimating lens unit collimating incoming light received from said optical fiber to generate a collimated incoming beam directed along said longitudinal optical axis away from said optical fiber connection unit;

a first mirror directing said collimated outgoing beam along said longitudinal optical axis towards said optical fiber connection unit; and

a second mirror directing said collimated incoming optical beam from said optical fiber connection unit towards said optical signal receiving unit;

wherein said first collimating lens unit and said second collimating lens unit are selected such that said collimated incoming beam and said collimated outgoing beam facilitate independent fine optical alignment of said laser diode, said optical detector, and said optical fiber connection unit.

Claim 26 (New). The optical module of claim 25, wherein said collimated incoming beam has an essentially constant cross-sectional shape in a region between said optical connection unit and said second mirror and said collimated outgoing mirror has a constant cross-sectional shape in a region between said first mirror and said optical connection unit.

Claim 27 (New). The optical module of claim 25, wherein said first collimating lens unit is adapted to generate a diffraction limited beam.

Claim 28 (New). The optical module of claim 25, wherein said second collimating lens unit is adapted to generate a diffraction limited beam.

Claim 29 (New). The optical module of claim 25, wherein said first collimating lens unit is a collimating optical objective including at least one circular aspherical lens.

Claim 30 (New). The optical module of claim 25, wherein said first collimating lens unit is a collimating anamorphic objective including at least two mutually perpendicular cylindrical lenses.

Claim 31 (New). The optical module of claim 25, wherein said first recess is located along a distal portion of said housing with respect to said optical fiber connection unit and said second recess is located proximate to said optical fiber connection unit such that said outgoing beam passes through said second mirror, said second mirror being transparent for said outgoing beam.

Claim 32 (New). The optical module of claim 25, wherein said second recess is located along a distal portion of said housing with respect to said optical fiber connection unit and said first recess is located proximate to said optical fiber connection unit such that said incoming beam passes through said first mirror, said first mirror being transparent for said incoming beam.

Claim 33 (New). The optical module of claim 25, wherein said optical fiber connection unit includes an optically transparent spacer sandwiched between said second collimating

lens unit and an optical fiber holder, wherein an optical fiber is held in a butt connection with said transparent spacer.

Claim 34 (New). The optical module of claim 25, wherein said optical fiber connection unit includes a ferrule for holding an optical fiber and an optically transparent spacer sandwiched between said second collimating lens unit and said ferrule, wherein an optical fiber is held in a butt connection with said transparent spacer, said pre-assembled optical fiber unit converting incoming light into a collimated incoming beam.

Claim 35 (New). The optical module of claim 31 wherein said second collimating lens unit has a height above a surface of said housing determined by a height of said transparent spacer.

Claim 36 (New). An optical module for a high-speed bidirectional transceiver, comprising:

a housing having a longitudinal optical axis;

an optical signal generating unit located in a first portion of said housing generating an outgoing beam having a first wavelength;

an optical signal receiving unit located in a second portion of said housing adapted to receive signals at a second wavelength;

an optical fiber connection unit attached to said housing and having an optical fiber;

a first mirror disposed proximate said optical signal generating unit directing said outgoing beam from a beam emission direction to a direction parallel to said longitudinal optical axis towards said optical fiber connection unit; and

a second mirror directing an incoming optical beam from said optical fiber connection unit to a beam receiving direction of said optical signal receiving unit;

wherein said first mirror is reflective at said first wavelength, said second mirror is reflective at said second wavelength, with a mirror closest to said optical fiber connection unit being reflective for one of said first and second wavelengths and transparent for the other of said first and second wavelengths.

Claim 37 (new). The optical module of claim 36, wherein said optical fiber connection unit is a pre-assembled unit comprising a collimating lens unit, an optical fiber holder, a spacer between said collimating lens unit and said optical fiber holder for an optical fiber, said spacer being sandwiched between said collimating lens unit and said optical fiber holder, said fiber having a core and being in butt connection with said spacer.

Claim 38. The optical module of claim 36, further comprising a collimating lens unit to collimate said outgoing beam.

Claim 39. The optical module of claim 36, wherein said outgoing beam is collimated along at least a portion of a first optical path between said first mirror and said optical fiber connection unit and said incoming beam is collimated along at least a portion of a second optical path between said optical fiber connection unit and said second mirror.

Claim 40. The optical module of claim 36, wherein said optical signal generating unit is disposed in a first recess of said housing disposed parallel to said longitudinal optical axis, said optical signal receiving unit is disposed in a second recess of said housing disposed parallel to said longitudinal optical axis, and said optical fiber connection unit is disposed at one end of said housing parallel to said longitudinal optical axis.

Claim 41. The optical module of claim 40, wherein said first recess and second recess are disposed in a longitudinal slot of said housing and said optical fiber connection unit is disposed at one end of said slot.

Claim 42 (new). An optical module for a high-speed bidirectional transceiver having a first optical path and a second optical path for transmitting optical beams in mutually opposite directions comprising:

a housing;

an optical signal generating unit having a beam emission direction, said optical signal generating unit located in said housing and generating first optical beam having a first wavelength;

an optical signal receiving unit having a beam receiving direction, said optical signal receiving unit located in said housing and receiving a second optical beam having a second wavelength;

an optical fiber connection unit attached to said housing and having an optical fiber for transmitting said first optical beam and said second optical beam;

a first mirror for reflecting said first beam for changing direction thereof from said beam emission direction to a direction coaxial with said optical fiber; and

a second mirror for reflecting said second beam for changing direction thereof from said direction coaxial with said optical fiber to said beam receiving direction.

Claim 43 (new). The optical module of claim 42, wherein said optical fiber connection unit is a pre-assembled unit comprising a collimating lens unit, an optical fiber holder, a spacer between said collimating lens unit and said optical fiber holder and an optical fiber, said spacer being sandwiched between said collimating lens unit and said optical fiber holder, said fiber having a core and being in butt connection with said spacer.